Governor's Water Augmentation Council

Desalination Committee

May 15, 2017 Meeting Summary

Time: 9:00am – 11:00am
Location: Arizona Department of Water Resources

Welcome and Introductions

Chuck Cullom, Central Arizona Project's Colorado River Programs Manager, facilitated the meeting on behalf of Chairman Robert Lotts. Mr. Cullom called the meeting to order and welcomed those in attendance. All participants and presenters introduced themselves individually.

Goodyear Brine Disposal Presentation

Mark Holmes, Water Resources Manager for the City of Goodyear, presented on Goodyear's innovative approach for inland brine disposal. After considering several different methods described in the Central Arizona Salinity Study (2010), including injection wells, brine concentration, evaporation ponds, and even a pipeline to Yuma, wetland surface discharge seemed to be the most economical. This led to a brine wetland demonstration pilot project in 2010 which included several test beds that contained various types of salt tolerant plants and evaluated? their ability to capture solids such as selenium, arsenic, and nitrate. The City of Goodyear's conclusions from this project can be found here.

Full Recovery Desalination℠ Presentation

Hubble Hausman and Paul Wallace, the Chief Executive and Chief Technology Officers from Enviro Water Minerals Company, introduced their full resource recovery technology that can extract dissolved solids contained within salt water sources, and described how they sell the minerals on the market, thereby reducing the cost to desalinate water. Their recently constructed facility in El Paso processes 1.3 million gallons per day of raw brackish groundwater in addition to 1.3 million gallons per day of brine concentrate. Products extracted from the inputs include potable-quality water, caustic soda, hydrochloric acid, gypsum, and magnesium hydroxide. The cost to provide this service for El Paso is less than $1,000 per acre foot. The company's presentation can be viewed here.

Buckeye Waterlogged Area Discussion

Ron Whitler, a hydrologist with the City of Buckeye, opened the discussion with a short history of the Buckeye Waterlogged Area and the city's challenge to meet customer satisfaction due to the high total dissolved solids (2100 – 2500 mg/L) of the water from the area. Mr. Whitler noted that the area does not have replenishment district under A.R.S. Title 45 at the moment due to a 15-year temporary exemption issued by the state legislature as a result of the area being designated as waterlogged. Mr. Whitler further noted that this would make it an ideal time to treat the water without the city having to concern itself with the replenishment costs ($697 per acre foot). However, the high price tag associated with brine disposal has also been a major deterrent from undertaking the treatment of the brackish water. Kyle Hindman, the Vice President of the Board of the Buckeye Water and Conservation District,

also spoke of the expensive process of consistently having to run the pumps to drain the brackish water from the waterlogged area.

Potentially Promising Areas for Desalination

Leslie Katz, a Hydrogeologist with Montgomery & Associates, Inc., presented on a statewide assessment of brackish groundwater supplies completed for Central Arizona Water Conservation District (CAWCD) in 2008, which identified areas where desalination treatment was feasible based on the requirements of CAWCD. The six areas that were determined to be the most promising for such treatment were the Buckeye Waterlogged Area, the Gila Bend Basin, the Yuma Mesa and Yuma Valley, the Picacho Basin, the Winslow-Leupp Area, and the Willcox Playa. The pros and cons of each of these areas are listed in Ms. Katz's presentation here.

Ms. Katz also recommended revisiting Arizona's regulatory structure for deep-well brine injection opportunities.

Schedule the Following Meeting and Closing Remarks

The date for the next Desalination Meeting will be determined soon. All stakeholders will be notified by email of the event date.